



VR BASED M-TECHNOLOGY WITH CULTURE-HERITAGE ASSETS FOR INDIAN TOURISM

Dr. Vivek Chaplot¹ | Mohammad Akram Khan²

¹ Research Guide

² Research Scholar

ABSTRACT

The main objective of this paper is to provide information about the role of technology towards preserving the Indian Cultural Heritage. Modern technologies have captured all regions in the market even heritage areas also. Today's Technologies have kept India's heritage values still intact. Virtual 360 degree images of monuments, landmarks, natural wonders and museums are developed. These images are accessible by everyone with an internet connection. People can visit these places through their computer system without even visiting to the physical locations.

KEYWORDS: M-Technology, Google Maps, Play store, Indian Cultural Heritage, Preserving Indian Heritage, Emerging Technology, Retaining Indian Culture, Google Street View, Google Culture Institute.

Introduction:

India is the crib of the human race, the birthplace of human speech, the mother of history, the grandmother of fable and great grandmother of ritual. Our most valuable and most constructive materials in the human history are esteemed up in India only. The culture of India is the way of living of people of India. The Indian culture is also known as a unification of several cultures. Many rudiments of India's assorted cultures such as Indian Religion, Indian Philosophy and Indian cuisine have had a profound impact across the world. India is one of the world's oldest civilization. As we all know India is popular for its cultural heritage values, but with age these values are fading away.

As we are losing these precious values because of aging problem, technology is holding them intact for us. Technology is playing a vital role in preserving the cultural heritage of India. Now a days Google Inc. has proven itself for preserving these values. Google has invented Google Street View, Google Cultural Institute and Google Play Store Applications which gives user a virtual tour of monuments, buildings, places, museums and many more. People can experience heritage values of any country with the help of these emerging technologies.

Current trend:

Google has made some services that keep intact the advantages factors of Cultural Heritage. These services works correspondingly by sustained, so that people could get good service. Some of these service that are useful in preserving the cultural heritage of India are as follows:

1. Google Street View:

Google Street View is a technology featured by Google Maps and Google Earth that provides panoramic views from positions along many streets in the world. It was launched in 2007. Google Street View displays panoramas of stitched images. Most of the photography for the images is done by car, but some is done by trekker, tricycle, walking, boat, snowmobile, and underwater apparatus.

Google Street View is available as a component of Google Maps, as a web application, and as a mobile application for Android and iOS. Google Maps used Adobe Flash for Street View. Data for Google Street View is captured with the help of following components:

- Cameras.
- R2.
- R5.
- R7.
- Positioning.
- Laser Range Scanners.
- Vehicles.

Above mentioned devices captures data for Google Street View and develops a virtual tour of the particular place.



Car



R5 Droid



R7 Droid



Laser Range Scanner



Google Street View of Taj Mahal



Google Street View of Red Fort

2. Google Cultural Institute:

Google Cultural Institute is an initiative unveiled by Google following the 2011 launch of Google Art Project. The Cultural Institute was launched in 2011, and put 42 new exhibits online. It is an effort to make important cultural material available and accessible to everyone and to digitally preserve it to educate and inspire future generations.

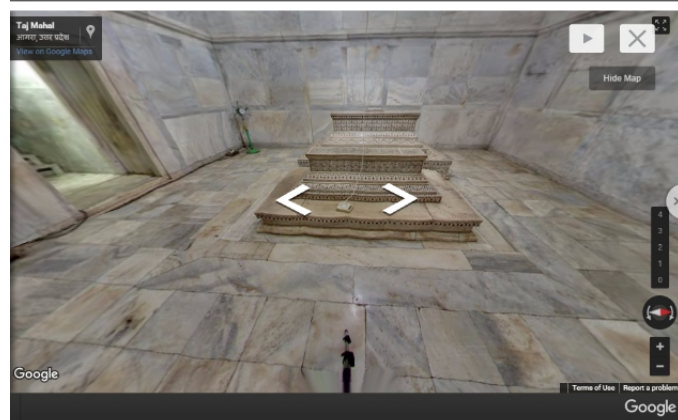
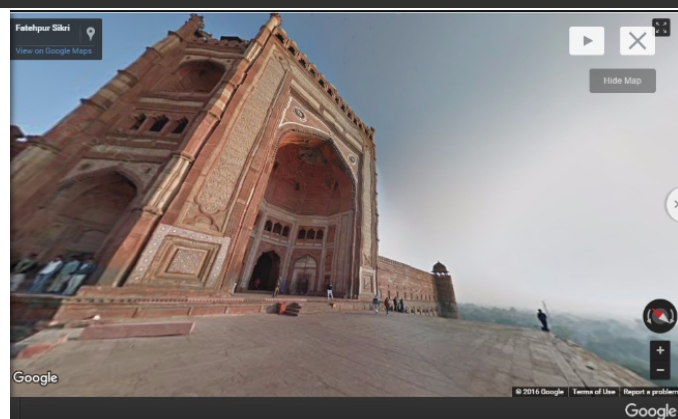
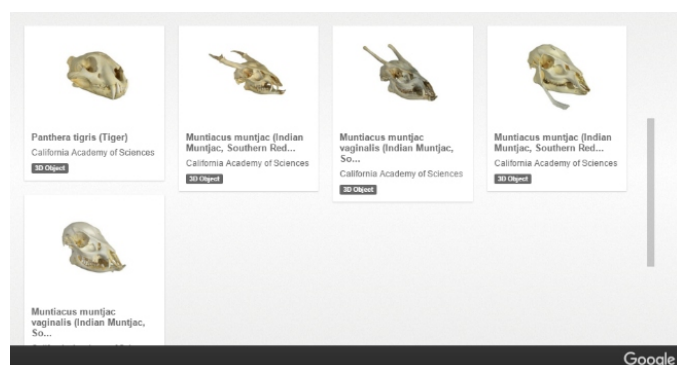
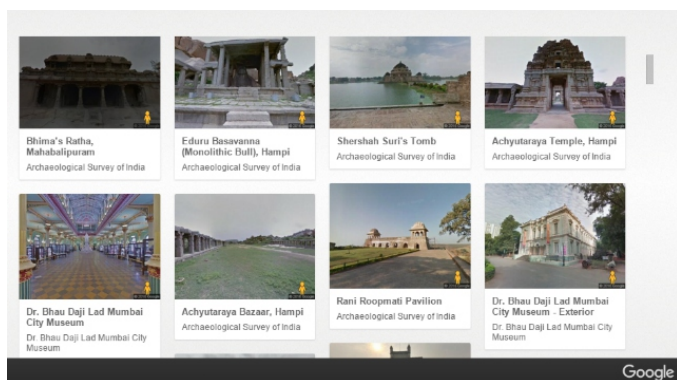
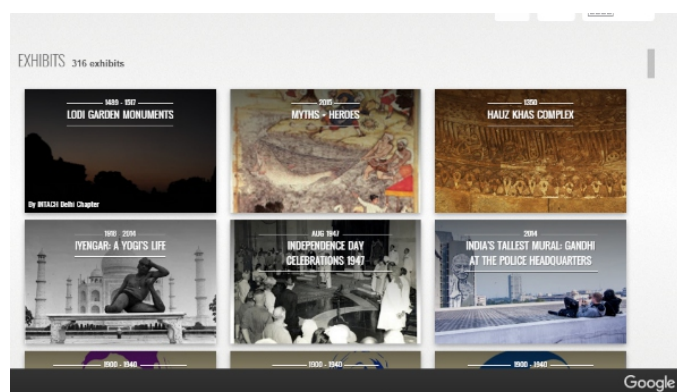
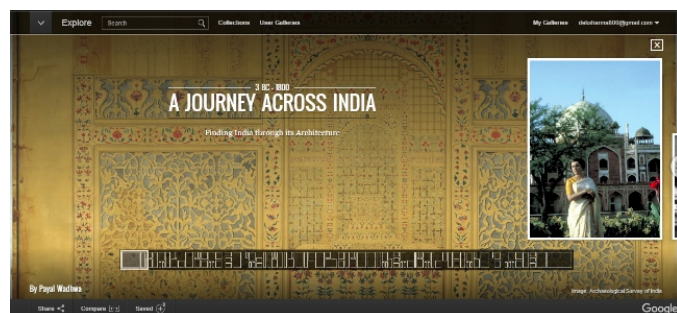
The Cultural Institute includes the Google Art Project, which features high-resolution images of artworks from museums in over 40 countries; the World Wonder Project, which presents three dimensional recreations of the world heritage sites, and archival exhibitions, many in partnership with museums around the world.

The Cultural Institute has kept India's most of the heritage valuable still intact.

The Cultural Institute has India's 316 Exhibitions, 38,577 Heritage items, 37,530 Heritage photographs, 311 Museum views, 5 3D items and many more valuable information. The Indian Exhibition on the Cultural Institute include the timeline of monuments, Art Galleries, Myths, Heroes, Independence Day Celebration, Indian Music, Indian Theater, Folk Music, Well-known Personalities and The Journey of India.

Heritage items includes 7000 Museum: A Project for Republic of India, An Air Indian Plane (1950), Quit India Moment (1942), View of Taj Mahal (1887), India Gate (1931), India Partition (1947) and many relevant information regarding India. The Cultural Heritage Institute contains virtual museum of Mahabalipuram, Mumbai City Museum, Hampi, Gateway on India, Jama Masjid, Qutub Minar, Forts of Chittorgarh, Taj Mahal, Caves of Ajanta and Ellora Caves and many well-known heritage places.

People can visit Indian cultural heritage place without physically going there. There is a benefit of preserving these details digitally. Any person outside of India can effortlessly take tour of these monuments, museums and streets of India.

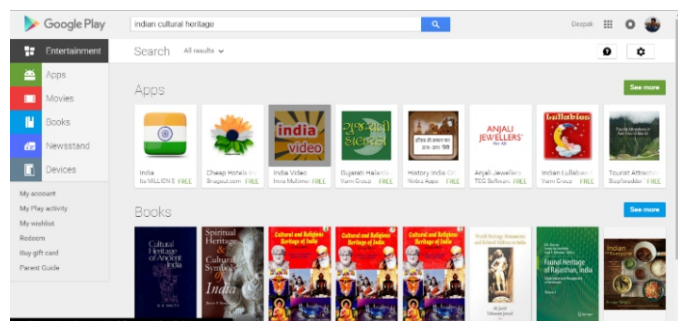


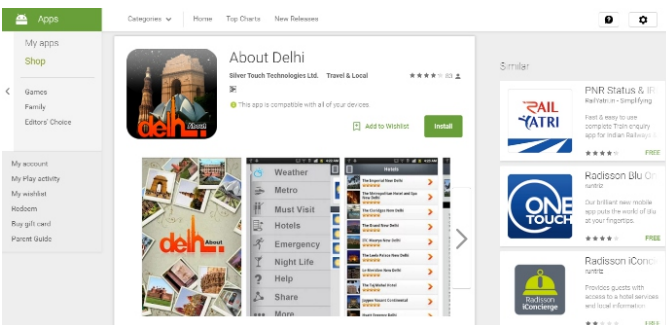
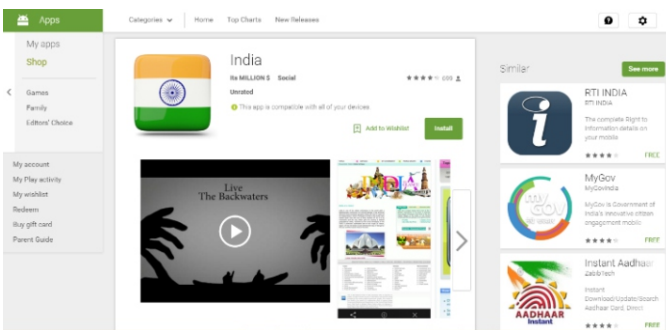
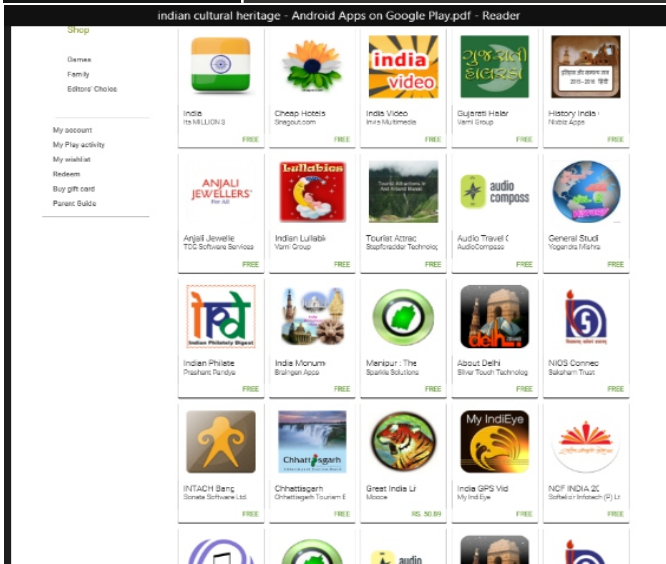
3. Play Store Applications:

Google Play or Google Play Store is a digital distribution platform operated by Google. It serves as the official app store for the Android operating system, allowing users to browse and download application developed with the Android SDK and published through Google. Google Play Store also serve as a digital media store offering music, magazines, books, movies and television programs. Google play store keeps many applications that made to share information about The Cultural Heritage of India. There are many digital books and videos available on Play Store that spreads information about India. These applications contains information about various monuments, history, sculptures, religions, states, cities and well-known personalities of India. These kind of application have preserved the Cultural Heritage of India intact.

Some applications on Play Store are developed for respective city itself. It means they contain information about a particular city only. Some application are developed for a specific state itself. They contain information about that respective state. These application are much useful and helpful in preserving and maintaining the cultural heritage of India digitally. Users can easily download these application to their smart phones or tablets and they can access the information beneath it. There are enormous applications on internet but some of them, which retain India's Cultural Heritage are described below:

- India (Its MILLION \$)
- History India GK for Exams (Nixbiz Apps)
- Audio Travel Guide (Audio Compass)
- India Monuments (Braingen Apps)
- Great India (Mooce)
- India and Indians (RE News India)





Application Areas:

1. Websites.
2. Maps.
3. Tours.
4. Virtual Tours.
5. Monuments Experience.

Drawbacks:

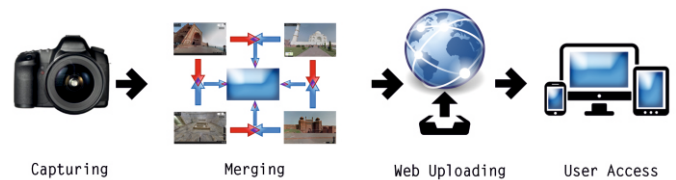
1. People are not able to visit the original location physically.
2. There is no interaction with other outside world people.
3. Person without Internet Connectivity isn't able to access the technology.
4. The images in the virtual tour are 1-2 months old or may be more.

Review of Literature

The Rigvedic Sanskrit is one of the oldest attestations of any Indo-Aryan language, and one of the earliest attested members of the Indo-European language family. India is one of the world's oldest civilizations. The Indian culture, often labeled as an amalgamation of several various cultures, spans across the Indian subcontinent and has been influenced and shaped by a history that is several thousand years old. Throughout the history of India, Indian culture has been heavily influenced by Dharmic religions. They have been credited with shaping much of Indian philosophy, literature, architecture, art and music. Greater India was the historical extent of Indian culture beyond the Indian subcontinent. This particularly concerns the spread of Hinduism, Buddhism, architecture, administration and writing system from India to other parts of Asia through the Silk Road by the travelers and maritime traders during the early centuries of the Common Era. To the west, Greater India overlaps with Greater Persia in the Hindu Kush and Pamir Mountains. During the medieval period, Islam played a significant role in shaping Indian cultural heritage. Over the centuries, there has been significant integration of Hindus, Jains, and Sikhs with Muslims across India.

The first sculptures in India date back to the Indus Valley civilization, where stone and bronze figures have been discovered. Later, as Hinduism, Buddhism, and Jainism developed further, India produced some extremely intricate bronzes as well as temple carvings. Some huge shrines, such as the one at Ellora were not constructed by using blocks but carved out of solid rock. Indian architecture encompasses a multitude of expressions over space and time, constantly absorbing new ideas. The result is an evolving range of architectural production that nonetheless retains a certain amount of continuity across history. Some of its earliest production are found in the Indus Valley Civilization (2600–1900 BC) which is characterized by well-planned cities and houses. Religion and kingship do not seem to have played an important role in the planning and layout of these towns.

Current working of technology: Graphical Model:



Process Explanation:

We can see the whole working process of technology for creating a virtual tour of a respective monument or a place in the image displayed above. In the first phase images of monuments, museums, places, sculptures and buildings are captured with the help of Cameras, R2 Droids, R5 Droids, R7 Droids, Laser Range Scanner or Camera Mounted Vehicle. These images are captured in a high definition end for an effective and premium usage. When all the images are captured, then these image are rendered and merged into a single 360° degree module/image with the help of an application software.

When the merged 360° image is ready with the help of application software then the final outcome image is uploaded to the internet for universal access. Now any person from any corner of the world is able to access these 360° images having an internet connection to his/her device.

Future Enhancement or scope:

The current technology is very advanced that it had covered most of the features required for maintaining and preserving the cultural heritage of India. The future enhancement in this technology can be like live satellite streaming of monuments, museums, places and sculptures of India. With the implementation of this technology people will be able to get the live feed of any heritage site in India.

In the current technology the images are still but in the future it may be possible that 360° degree videos are introduced to the world. This will be bringing an excitement to the people, who are accessing it. Live feed from the heritage places will be informing everyone person with the latest updates of respective sculpture, monument or museum.

Result and Analysis:

A Tourism survey was conducted to undertake the reports of a tour made by tourists from different parts of the world to visit India. At what cost they visited India, for how many days they visited, from which country they were and how many people referred the type of travel should be done. All these details are describe below in this table.

Travel Type	Expense	Duration	From Country	Referred By
Physically	Rs. 2,19,435	10 Nights	United States of America	45.63%
Physically	Rs. 45,990	5 Days	Dubai	52.84%
Physically	Rs. 89,990	7 Days	Singapore	59.19%
Physically	Rs. 64,300	6 Days	Hong Kong	61.68%
Virtually	Free	Unlimited	Anywhere from World	83.51%

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